

What is claimed is:

1. A continuous rubber-strip forming apparatus comprising:  
a rubber-strip extruding machine including an extruder having a screw for kneading a rubber material, and a gear pump for delivering the rubber material outputted from the extruder to a forming nozzle;

a tire-building drum on which a rubber strip is wound, the rubber strip being outputted from the rubber-strip extruding machine as to have a predetermined sectional shape;

a first driver unit for moving said rubber-strip extruding machine relative to said tire-building drum;

a second driver unit for driving said tire-building drum into rotation;

pressing device for pressing said rubber strip against the tire-building drum while said rubber strip is being wound on said tire-building drum; and

a control unit for controlling said driver units,

said controlling being made such that said rubber-strip extruding machine is driven to move relative to the tire-building drum when the tire-building drum is driven as rotated, as to sequentially wind the rubber strip on the tire-building drum.

2. A continuous rubber-strip forming apparatus as claimed in Claim 1, wherein at completion of such rubber-strip winding operation, said gear pump is reversely rotated for removing a residual pressure in said gear pump.

3. A continuous rubber-strip forming apparatus as claimed in Claim 1 or 2,

said controlling being made in sequence, at start of a rubber-strip winding operation, such that: said forming nozzle is firstly brought into intimate contact with said tire-building drum; and then said forming nozzle is taken away from the tire-building drum by a predetermined distance.

4. A continuous rubber-strip forming apparatus as claimed in any one of Claims 1 to 3, further comprising:

a first servomotor for driving said tire-building drum;  
and

a second servomotor for driving said gear pump;

wherein the rotational speeds of said tire-building drum and said gear pump are individually set so as to eliminate the need for detecting sag in the rubber strip being conveyed from said forming nozzle to said tire-building drum.

5. A continuous rubber-strip forming apparatus as claimed in any one of Claims 1 to 4, wherein said first driver unit includes a driving mechanism for permitting said rubber-strip extruding machine to be moved along: a first direction orthogonal to a rotary axis of said tire-building drum; a second direction parallel to said rotary axis; and a third and rotational direction defining a swing movement about a predetermined axis.

6. A continuous rubber-strip forming process performed by a continuous rubber-strip forming apparatus that is comprised

of:

a rubber-strip extruding machine including an extruder having a screw for kneading a rubber material, and a gear pump for delivering the rubber material outputted from the extruder to a forming nozzle;

a tire-building drum on which a rubber strip is wound, the rubber strip being outputted from the rubber-strip extruding machine as to have a predetermined sectional shape;

a first driver unit for moving said rubber-strip extruding machine relative to said tire-building drum;

a second driver unit for driving said tire-building drum into rotation;

pressing device for pressing said rubber strip against the tire-building drum when said rubber strip is wound on said tire-building drum; and

a control unit for controlling said driver units;

said continuous rubber-strip forming process comprises sequentially winding said rubber strip on said tire-building drum by control-wise moving said rubber-strip extruding machine relative to said tire-building drum maintained as driven as rotated.

7. A continuous rubber-strip forming process as claimed in Claim 6, further comprising a step of reversely rotating said gear pump for removing a residual pressure in said gear pump at completion of such rubber-strip winding.